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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,830	08/21/2002	Lih-Ren Shiue	JCLA9625	9790

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EXAMINER	
CHANEY, CAROL DIANE	
ART UNIT	**PAPER NUMBER**
1773	

DATE MAILED: 02/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

c.k' 4p

Office Action Summary	Application No.	Applicant(s)	
	10/064,830	SHIUE ET AL.	
	Examiner	Art Unit	
	Carol Chaney	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 December 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *8-21-02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

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Election/Restrictions

Applicant's election of Group I, claims 1-13 in the reply filed on 30 December 2004 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 112

Claims 10, 11 and 12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

With regards to claim 10, a controller which regulates a capacitor so as to provide a "power gap between a load demand and the power demand and a power provided by said battery" is not disclosed. Thus, one of ordinary skill in the art is not enabled to make and use this invention.

With regards to claim 11, it is unclear how a capacitor device can extract all of the energy of a battery energy. Extracting all of the energy implies an process which is 100% efficient in extracting energy, which is thermodynamically impossible.

With regards to claim 12, it is unclear how a capacitor element can receive a charging current of any magnitude without exceeding an open cell voltage of the capacitor. An extremely large charging current, even through a small resistance, can

produce a significant voltage. Thus, one of ordinary skill in the art would anticipate that there should be limits on the magnitude of usable charging currents.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "acceptable current" in claim 13 is a relative term which renders the claim indefinite. The term "acceptable" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Thomas et al., US Patent 5,587,250.

Thomas et al. disclose a energy storage system which includes a first power source, which may be a battery, particularly a zinc-air battery or a lithium polymer battery. (See column 2, lines 23-27.) The system further includes a second power source within the same housing. The second power source may be a capacitor. (See Fig. 3 and column 4 lines 37-65.) Electronic circuitry connected to the two power sources is adapted to condition the output of the two power sources. (See column 3, lines 12-22.) The circuitry is considered to control complementary charge and complementary discharge between the battery element and the capacitor element." With regards to claim 6, both the capacitor and the battery disclosed by Thomas et al. may be the same, for example, alkaline. (See column 2, lines 36 and 52.)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas et al. in view of Lian et al., US Patent 5,563,765.

As discussed above Thomas et al. disclose applicants' invention essentially as claimed, with the exception that Thomas et al. do not disclose specific energy densities or electrolytes for the capacitors used. Lian et al. disclose capacitors having a charge density of 0.2 F/cm^2. (See column 5, lines 37-45.) The capacitors were tested using a

31% KOH electrolyte. (See column 4, lines 4-9.) Because of the relatively high charge density of the capacitors disclosed by Lian et al., one of ordinary skill in the art would consider these to be "super capacitors". It would have been obvious to one of ordinary skill in the art to use the capacitors suggested by Lian et al. in the energy storage system disclosed by Thomas et al. because Thomas et al. suggest the Lian capacitors as potentially useful in their invention. (See Thomas et al., column 3, lines 6-11.)

Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas et al. in view of Narang et al., US Patent 5,548,055.

As discussed above, Thomas et al. discloses applicants' invention essentially as claimed with the exception that Thomas et al. do not disclose capacitors with polymer electrolyte or organic solvent in the electrolyte. Narang et al. disclose electrolytes useable with super capacitors. (Column 10, lines 28-33.) The electrolytes contain siloxane and polyvinylidene fluoride polymers and plasticizer. (See Fig. 1.) The plasticizer may be lower alkyl carbonates, which would include diethyl and dimethyl carbonates. (See column 20, lines 50-53.) The electrolytes are taught as providing high ambient temperature ionic conductivity and excellent physical and mechanical attributes. (Column 5, lines 1-7.) Therefore, it would have been obvious to one of ordinary skill in the art to use the electrolyte disclosed by Narang et al. in both the capacitor and battery of the Thomas et al. invention in order to achieve high ionic conductivity and good mechanical properties.

Claims 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas et al.

Thomas et al. disclose applicants' invention essentially as claimed, with the exception that Thomas et al. do not specifically disclose the specifics of charge and discharge control recited in applicant's claims. However, Thomas et al. disclose a variety of power output conditioning circuitry are possible in their system. (See column 3, lines 11-22.) Thus, one of ordinary skill in the art would appreciate the power conditioning circuitry disclosed by Thomas et al. would include the systems as claimed by applicants in instant claims 9-13.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Liang, US Patent 3,811,944 describes a electric cell which includes a capacitor and battery.

Kung, US Publication 2003/0134158 A1 discloses a battery and protection circuit in a single housing.

Bean et al. US Patent 6,645,663B2 discloses a housing holding a battery and capacitor.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carol Chaney whose telephone number is (571) 272-1284. The examiner can normally be reached on Mon - Fri 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Carol Chaney
Primary Examiner
Art Unit 1745

22 February 2005